



*Papilio demoleus sthenelus*

Butterfly &  
Other  
Invertebrates Club Inc.  
Newsletter

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## CLUB PLANNING AND ORGANIZING GROUP - 2001

President:	Helen Schwencke	07 3844 6677
Vice President:	John Moss	07 3245 2997
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Publicity:	Lois Hughes	07 3206 6229
Others:	Ros and Lindsay Popple,	

## PLANNING AND ORGANIZATION MEETINGS

A quarterly meeting is scheduled in order to plan club activities and the newsletter.  
See BOIC Programme.

## CONTACT ADDRESS

PO Box 2113, Runcorn 4113, Queensland

## AIMS OF ORGANIZATION

- To establish a network of people growing butterfly host plants;
- To hold information meetings about invertebrates;
- To organize excursions around the theme of invertebrates e.g. butterflies, fireflies, ants, dragonflies, beetles, freshwater habitats, and others;
- To promote the conservation of the invertebrate habitat;
- To promote the keeping of invertebrates as alternative pets;
- To promote research into invertebrates;
- To encourage the construction of invertebrate friendly habitats in urban areas.

## NEWSLETTER DEADLINES

If you want to submit an item for publication the following deadlines apply:

March issue – February 21<sup>st</sup>

June issue – May 21<sup>st</sup>

September issue – August 21<sup>st</sup>

December issue – November 21<sup>st</sup>



## EDITORIAL

Hello all and welcome to another productive Butterfly and Other Invertebrates Club year. As well as our usual excursions, speakers, stalls and other activities, this year a number of our members are organising a half day workshop on butterfly habitat, rearing, gardening and conservation. To be held on the 2<sup>nd</sup> of June, World Environment Day, in conjunction with The Redland Shire Council's Nature Conservation Unit, this promises to be a packed and informative day. We hope to see you there. Please come and introduce yourself.

Our club is looking for a Secretary. While we currently have all the tasks covered by other committee members, it would be very helpful to have someone in the position who can take on some of this workload. Please read our advertisement and consider taking on the position. The planning and management group is a very effective and energetic group, and we have lots of fun and share lots of information at our planning and management meetings, which are open to all members to attend. You too could be part of this team.

*Helen Schwencke*

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## EXCURSION REPORTS

**Mt Coot-tha Botanic Gardens Dragonfly Excursion, 21st November, 2000** - Led by Deniss Reeves

We had little hope for this activity, the sky was overcast and the weather dull. Since Dragonflies and Damselflies are solar powered, there wasn't much chance that many would be on the wing. The few club members who showed up, just in case there was anything to be seen, were fortunately rewarded by enough butterflies and dragonflies to keep us entertained for a few hours thanks to the species identification and information provided by Deniss Reeves. We visited the Japanese Garden and the large pond. Both these sites attract species that utilize a range of other still water habitats, as well as ponds.

At the Japanese gardens we saw:

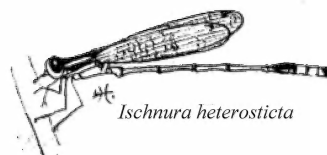
***Hemicordulia australiae***. Species in this genus can be recognised by their bouncing flight pattern. The specimens we spotted were black with an iridescent greenish sheen and with yellow markings.

***Orthetrum caledonicum*** males can be recognised by their powder blue colour and the somewhat tapered, black tip to the abdomen. They can frequently be seen perching with their wings drawn forward and downward. Females emerge with a black and yellow colouration, progressively turning bluish with age.

***Hemianax papuensis*** can be distinguished by its yellow "tail light". It is pale brown to yellow with dark mottling. This species is common and widespread. It has a distinctive patrolling or hawking flight habit.

***Xanthagrion erythroneurum***'s unique bright red markings on head, thorax and first few abdominal segments and blue terminal spot on otherwise blackish abdomen make this species easy to recognise.

***Ischnura heterosticta*** males and immature females have a blue thorax, dark abdomen and a blue tail. Mature females are a grey colour. These are tiny to medium-sized damselflies.



***Trapezostigma loewi*** is a medium to large dragonfly, with black-tipped reddish-brown abdomen, and a large brownish, saddle-shaped, basal patch on the hindwing. They are often seen flying in numbers at a height of about 3 or 4 metres."

***Austroargiolestes icteromelas nigrolabiatu***s is one of two sub-species of this medium-sized to large damselfly. It is distinguished from the other subspecies by having a brownish-black labium (somewhat like a lower lip). Unlike other damselflies, as well as species of *Austroargiolestes*, *Lestes concinnus*, species of *Archargiolestes*, *Griseargiolestes*, *Miniargiolestes* and *Podopteryx* all perch with wings outspread. Females in particular can be hard to identify as their colouration changes as they mature. The colour of the specimen we observed were bronze black with pale markings.



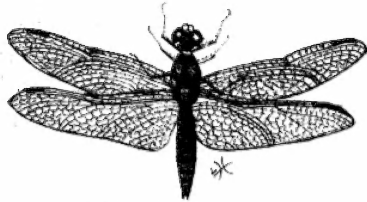


At the big pond we saw:

***Pseudagrion microcephalum*** is a medium sized damselfly with bright blue head and thorax, and a dark abdomen with a bright blue "tail" spot. It is slightly larger than, and brighter than, *Ischnura heterosticta*.

***Austroagrion watsonii***. This small damselfly is blue and black, with greenish marking on the side of the thorax. They have tiny blue dots on each abdominal segment. The 8th & 9th abdominal segments are blue with a prominent roughly rectangular central marking.

***Diplacodes haematodes*** mature males are brilliant scarlet, including the eyes, with red wing venation. Females are a sandy yellow colour. This species is a medium-sized dragonfly.



*Diplacodes haematodes*

Typically dragonfly larvae have a number of stages (see letter below). The larvae breathe through their rectums using internal gills.

Damselfly larvae absorb oxygen directly from the water through three caudal lamellae which deliver oxygen directly to the tissues. Adults of both groups breathe through spiracles.

Some damselflies lay their eggs into the tissues of plants. This makes markings on the leaves or stems that can indicate that eggs are present or have hatched.

The issue concerning dragonflies and damselflies for lay people remains their names. Scientific names are hard to remember for those of us who are interested in observation only. The Australian Dragonfly Society (ADS) will be working on common names for Odonata. A projected field guide (to be published in 2002) will list common names. The Australian Dragonfly Society will collaborate with the authors of this forthcoming field guide (Gunther Theischinger and John Hawking) to ensure that different common names for the same species aren't introduced. The ADS would be glad to hear from any BOIC members who have suggestions for common names. However, to do so, you must be sure of the scientific ID of the species you wish to suggest a name for.

This write up was compiled from notes taken on the excursion, and from Watson, J. A. L., Theischinger, G., and Abbey, H. M. (1991). *The Australian Dragonflies : a guide to the identification, distribution and habitats of Australian Odonata*. Canberra: CSIRO. Thanks goes to Deniss Reeves for leading the excursion and his assistance with this write up.

***Helen Schwencke***

As a follow-up Deniss sent the following letter:



I learn something every day! ... I [did] a bit of researching: Watson et. al. state [that dragonflies and damselflies have] "commonly, 10-12 larval stages" and Corbet in his voluminous review of dragonfly behaviour and ecology states: "The number of molts, and therefore the number of larval stadia, ranges from 9 to 17..."

This brings up the subject of definitions of larval stages of development. This has been the subject of discussion in some of the overseas dragonfly societies and Corbet (1999) quotes the following definitions in his glossary. (I might add that Corbet is the world's foremost "odonatologist" and is held in extremely high regard worldwide.)

Instar: interval between two apolyses (apolysis is the separation of the exocuticle from the endocuticle before ecdysis. This allows the larva to extricate itself from its old exocuticle, dressed in its expandable endocuticle, which then becomes the new exocuticle).

Stadium: stage of morphological development between two successive molts.

ecdysis: the process of molting

So learning scientific names is not the only difficult aspect of the study of Odonata!

Putting the above in my language, what we called the instar is now correctly referred to as a stadium (a physical entity) and "instar" correctly refers to a time period between molts during which the larva feeds and fills its new "skin" to its maximum "stretch potential" before repeating the process again. So I guess we can still say a larva goes through [a number of] instars, but during each of these time intervals its physical entity is a "stadium".

Full reference for Corbet is:

Corbet, P.S. (1999) - Dragonflies: Behaviour and Ecology of Odonata. Harley Books: Colchester. Cost is about \$165 +.

At 829 pages and nearly 1.7 kg in weight, this is not an easy book to read in bed! I hope you find this interesting and don't want to throw the book at me.

Cheers, Deniss Reeves

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### **Stockyard Creek Excursion, 11<sup>th</sup> February, 2001**

Stockyard Creek is in Burbank and flows into the Tingalpa Reservoir. A Brisbane City Council conservation area on Alpertton St was the site visited. The vegetation varied from open eucalypt forest, some with *Eucalyptus maculata* to swampy areas along a creek verged by Matrush (*Lomandra* sp.) and Sawsedge or "Swordgrass" (*Gahnia clarkii*.) Some areas also had ephemeral ponds. Walkways have recently been built through parts of the area.

It was about 4.15pm when we started our walk, so not many butterflies were on the wing. Those spotted were:

Yellow-spotted Blue (*Candalides xanthopilus*)

Varied Eggfly (female) (*Hypolimnas bolina*)

Small Green-banded Blue (*Psychonotis caelius*)

Yellow Albatross (*Appias paulina*)



Orchard Swallowtail (*Papilio aegaeus*) (male) and larvae (on a wild citrus tree growing beside the creek)

Common Crow (a mating pair)(*Euploea core*) and eggs on Monkey Rope Vine

Purple Moonbeam larvae (*Phyliris innotatus*)

Orange Ringlets (*Hypocysta adiante*) flying above some unidentified grass species

A moth larvae with a pretty white lateral stripe was found on Wiry panic grass (*Entolasia stricta*) . Larvae and pupae of the Painted Sedge Skipper (*Hesperilla picta*) were in shelters on the Sawsedge.

2 species of Bottle Cicada intermittently stirred into full song, against a background hum of half a dozen other species including the Floury Baker (*Abrieta curvicosta*), Brown Bunyip (*Tamasa tristigma*) and Yellowbelly (*Psaltoda harrisii*). High up on the smooth-barked eucalypts Bronze Bark Buzzers (*Pauropsalta circumdata*) were rending their lazy drawl in the afternoon sun.

A variety of other unidentified invertebrates included a stick insect was found on the ground, and a brown weevil with short protrusions on its wings was found on Soaptree (*Alphitonia excelsa*).

**Helen Schwencke**

## PRESIDENT'S REPORT

**President's Report 2000, delivered to the AGM held on 21st January, 2001, at Dutton Park Scout Hall, Waterview Tce., Dutton Park**

My heart thanks goes to the ongoing support the club has received from its members, and most particularly its committee members, Rob MacSloy, John Moss, Rosylin Popple, and our hard working, consistent and dedicated members, Daphne Bowden, Lois Hughes, and Terri Wolf. It is with sadness that I have to announce the resignation of Rosylin Popple as the Secretary.

We are now entering our 7<sup>th</sup> year as a Club, and have grown from about 30 members when we started, to over 140 at last count, with more joining regularly. Much of this growth has come from the production of the Swallowtails poster and subsequent publicity organised principally at the hands of our Publicity Officer, Lois. Organising this publicity has provided us with a number of useful learning experiences.

We have now produced our 19<sup>th</sup> newsletter. It has now been in production for five years, and has been growing and developing. We regularly receive glowing feedback about the newsletter. It seems we have struck a good mix of scientific accuracy with and writing in lay people's language. Again, this feat couldn't be possible without the dedicated commitment of our contributing members. The thanks in particular goes here to Daphne for pulling the materials together, Lois for her delightful illustrations, and the striking new front cover of each issue, and John for scientific referencing and accuracy checking. Thanks also goes to John and Frank in particular for keeping a very constant stream of articles going, but also to everyone else who writes letters, makes observations or otherwise shares their knowledge or questions with us.



Our excursions/ functions for the year have included

- a field trip to Pine Mountain near Ipswich as part of an ongoing series of excursions to this area
- a joint light trapping activity with Whites Hill/Pine Mountain Community Group at Carina Heights,
- a look at Murdoch de Baar's garden and especially his method of maintaining a colony of Northern Purple Azures (*Ogyris zosine*) butterflies whose caterpillars live with ants, and
- a somewhat washed out dragonfly excursion to the Mt Coot-tha Botanic Gardens. Being overcast, few dragonflies were on the wing, but those that were gave a good display and helped us novices gain a better understanding.

Memorable talks included one on spiders by John Lawless, a presentation on ant associated butterflies with videos by Rod Eastwood, and a slide presentation on dragonflies by Dennis Reeves.

Our club was involved with five displays and stalls throughout the year. These included participating in an Easter Exhibition at Indigiscapes, the Society for Growing Australian Plants Spring Flower Show, a stall at the RANA Frog Day, The Oxley Creek Water Festival, and David & Margery Barnes' Open Garden. I'd like to take this opportunity to thank David and Margery for their generous support of the Club.

Club members have been involved in giving a number of presentations which include, but perhaps not comprehensively, talks to the Bayside Garden Club, the Redlands U3A, Land for Wildlife at Nambour, The Hut, Whites Hill / Pine Mountain Community Group and the Brisbane Permaculture Group.

The Club is involved in a number of projects including the Dutton Park Butterfly Habitat with the Dutton Park Scout Group, and revegetation projects with B4C which involves replanting various butterfly host plants in the Bulimba Creek catchment. The Club has received a Threatened Species Grant through the work of member, Thomas Creevey, to assist with the reintroduction of the Swordgrass Brown in Yugarapal Park.

Many club members have ensured that butterflies have been included in their other projects. For example, Vera and Fred Moffatt have included a trial planting of Karamat (*Hygrophila angustifolia*) along Enoggera Creek. Bob Miller has initiated many activities from Birdwings to Rustics.

Throughout the year our quarterly planning meetings, to conduct the business of the association and plan the program and newsletter, have continued. These meetings frequently become an interesting exchange of information. All members are welcome to attend.

The challenge for the year ahead is to reach out to more of our members to become involved in Club activities and to develop activities that are attractive to members and the general public.

Wishing you all a successful and prosperous 2001. **Helen Schwencke - President**





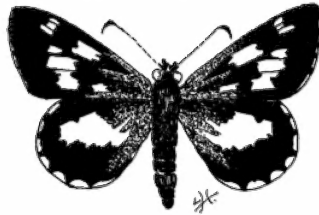
## REPORTS

### Southern Highland Border Area Excursion

This overnight excursion to the Stanthorpe/Tenterfield area by club members was on the weekend 6<sup>th</sup> and 7<sup>th</sup> of January 2001.

With an early start we travelled via Cunningham's Gap and Warwick, noting at the first site the presence of singing males of the Green Bunyip Cicada (*Tamasa rainbowi*), and on the green-stemmed *Acacia irrorata* a small undescribed species related to *Cicadetta adelaida*, which has a pleasant but complex song, composed of phrases from the tymbal organ ("drum") as well as wing clapping. Also noted was a male of the attractive but rarely seen Chequered Sedge-skipper (*Hesperilla mastersi*).

By mid morning we had reached the Leslie Dam near Warwick and noted several common species of cicada including the Clanger (*Psaltoda claripennis*) and the recently described Phantom Knight (*P. brachypennis*). On Cassinia bushes along the roadside Lindsay showed us the high-pitched buzzing small species *Cicadetta puer*, while Bob made a nice find of larvae and pupae of the Silky Azure (*Ogyris oroetes*) under the bark of eucalypts carrying a heavy load of the mistletoe *Amyema miquelii*.

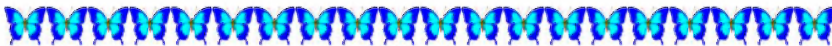


*Hesperilla mastersi*

By lunch time we were in Stanthorpe and immediately made our way up to Mt. Marlay which overlooks the town on the southeast. The conditions were quite dry but in spite of that we managed to find several species of cicada including the Pale Ambertail (*Cicadetta celis*), the Twin-spot Wattle Cicada (*C. labeculata*) and the Black Prince (*Psaltoda plaga*), but the Red-eye (*Psaltoda moerens*), last recorded in the 98/99 summer season, was again absent.

Butterflies were few, both in number and species. A lone Dainty Swallowtail (*Papilio anactus*) patrolled the crest and Marbled and Ringed Xenicas (*Geitoneura klugii* and *G. acanthi*) were alighting on the granite rocks. Bob caught a male Copper Pencilled-blue (*Candalides cyprotus*) but of skippers only the Dingy Grass-skipper (*Toxidia peron*), was present.

We next visited Girraween National Park which, no doubt due to the dry conditions, produced no noteworthy insects. We continued on to the Mt. Norman road section where previously the writer, Lindsay Popple, Don Sands and local naturalist Jean Harslett had found many cicadas, rare skippers and other insects (See BOIC newsletters 15 and 16 "Insect Observations in the Granite Belt").

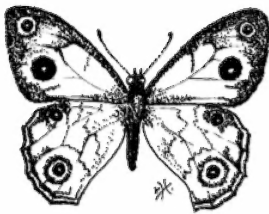




By late afternoon we had checked into a self-contained cabin at the Golfers Inn Motel at Tenterfield and shortly after found ourselves at the local Bowls Club restaurant enjoying a well deserved and sumptuous meal.

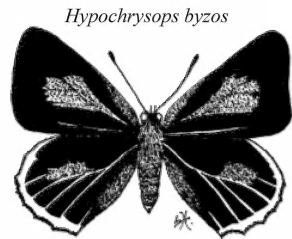
Next morning we drove 15km west to Mt. Mackenzie, where a year before Lindsay and I had found many interesting butterflies, cicadas, beetles and other insects. This time we were about two weeks too early for the flowering of the *Bursaria* trees. However we were rewarded by the sight of myriads of (mostly male) Common Brown butterflies (*Heteronympha merope*) as well as numbers of Marbled and Ringed Xenicas. Hill-topping below the T.V. transmission towers were several spectacular Imperial Jezebels (*Delias harpalyce*) many Bright Shield-skippers (*Signeta flammeata*) and some smaller skipper species, as well as a few fresh Eastern or Bronze Flats (*Netrocoryne repanda*). On a follow-up visit a few weeks later Graeme Forbes made additional discoveries (see report this issue).

By early afternoon we were on the road to our final destination Basket and Bark Hut Swamps approx. 26 km north-east of Tenterfield. It wasn't long before we saw our first montane Swordgrass Browns (*Tisiphone abeona regalis*) flying around their hostplants the Sawsedge *Gahnia sieberiana*. This race is similar to the coastal subspecies *T. a. morrissi* but is slightly larger, darker and with narrower white bands. We took some adults and larvae for photographs. We also found larvae of the Spotted Skipper (*Hesperilla ornata*) on the Sawsedge *Gahnia aspera*.



*Hypocysta euphemia*

A little further on at the Basket Swamp Falls Bob found a colony of Rock Ringlets (*Hypocysta euphemia*), adults of which were characteristically flying around the rocky cliff



*Hypochrysops byzos*

face. At the same site he also found eggs of the Yellow-spot Jewel (*Hypochrysops byzos*) on the underside of leaves of their hostplant *Pomaderris lanigera*. These later proved to be parasitised by a small wasp (Microhymenoptera) and none were viable. Subsequently, Graham Forbes found early instar larvae at this site, but that is another story!

We are most grateful to our driver and fellow club member Rob MacSloy who carried us safely and comfortably from Brisbane to our destinations and back again.

**John Moss**



## Butterfly Collecting Visit to Tenterfield – 27<sup>th</sup>-29<sup>th</sup> January 2001

After discussions with members of the BOIC at the AGM I travelled to Tenterfield to follow up their recent visit to this area.

On the afternoon of the 27<sup>th</sup> I visited Mt. McKenzie which is west of Tenterfield. The weather was very hot and dry and the butterfly most in evidence was *Heteronympha merope merope* (Common Brown). Only females were seen, the males no longer being present. A shallow damp yielded many fresh male *H. paradelpha* (Spotted Brown) while *Geitoneura klugii* (Marbled Xenica) and *Geitoneura acantha* (Ringed Xenica) were present in the drier areas.

Travelling back to Tenterfield late in the afternoon a pupa of *Ogyris olane* (Broad-margined Azure) was found under bark on a tall eucalypt carrying mistletoe, probably *Amyema pendula*. A female emerged the following day.

On the 28<sup>th</sup> I visited Basket Swamp Falls where ova and larvae of *Hypochrysops byzos* (Yellow Jewel) were found on *Pomaderris* plants growing beside the falls. Eighteen first and second instar larvae were found but many vacant silk pads seemed to indicate a fair mortality due to the spiders and assassin bugs that were present.

The general butterfly population was sparse with Satyrids being the most plentiful. Also present were quite a few March Flies including the large black and white *Scaptia guttata* (Donovan, 1805).

Early in the afternoon as I was returning to Tenterfield via the Bark Hut Swamp Road I took several *Tisiphone abeona regalis* (Varied Sword-grass Brown) in an area of roadside sawsedge. I then continued on to Mt. McKenzie but a violent electrical storm caused the expedition to be abandoned.

On the morning of the 29<sup>th</sup> the rain had stopped and although the sky was overcast there were occasional bursts of hot sunshine so I returned to Mt McKenzie. To my disappointment, however, no *H. paradelpha* were to be seen. This was surprising considering that this species was present in large numbers during the mid to late afternoon of the 27<sup>th</sup>. It would seem from this that this species may only fly later in the day. Two fresh male *Delias harpalyce* (Imperial Jezebel) males were seen but not netted. The heavy downpour of the previous day, however, had activated the leech population and they proved to be the only real blemish on an otherwise quite successful visit to the Tenterfield area.

A list of species taken and observed is below

(N = Netted O = Observed C = Collected)

	27 <sup>th</sup>	28 <sup>th</sup>	29 <sup>th</sup>
<b><u>Hesperiidae</u></b>			
<i>Trapezites symmommus symmommus</i>	N	O	
<i>Toxidia parvula</i>	N		



27<sup>th</sup> 28<sup>th</sup> 29<sup>th</sup>

**Papilionidae**

*Papilio anactus* N

**Pieridae**

*Appias paulina ega* N O O

*Delias harpalyce* O

*Belenois java teutonia* O

**Nymphalidae**

*Heteronympha merope merope* N N

*Heteronympha paradelpha* N

*Geitoneura klugi* N O

*Geitoneura acantha* N N

*Hypocysta adiante adiante* N

*Tisiphone abeona regalis* N

*Junonia villida calybe* O

*Danaus plexippus* O

*Danaus chrysippus petilia* O

**Lycaenidae**

*Nacaduba biocellata* N

*Ogyris olane pupa* C

*Zizina labradus labradus* N O

*Hypochrysops byzos* ova, larvae C

**Graham R. Forbes**

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**Butterflies and Ants**

This is the second of two videos (see Newsletter #19 for report on first video) presented by Rod Eastwood to a joint meeting of the Brisbane Butterfly and Invertebrates Club and the Redlands Branch of the Society for Growing Australian Plants on 26<sup>th</sup> July, 2000, at the Redlands Indigiscapes Centre, Capalaba. Rod had acted as Scientific Consultant and Researcher on both these videos.

**Video 2 – 'The Ultimate Guide: Ants'. Made by Green Umbrella (UK) in 1998.**

The second video covered many aspects of ant biology and several well known entomologists presented different segments. These included Edward O. Wilson, Phil DeVries and Professor Andrew Beattie of Macquarie University.

The basic body plan of an ant comprises three body segments, the head, thorax and abdomen, with six legs attached to the thorax. They breathe through spiracles, this diffuses the oxygen throughout their bodies by way of tiny tubes. Ant eyes are multi-faceted.

There are about 10,000 known species of ants and probably another 10,000 waiting to be discovered. Each species is adapted to its own niche.





Ants keep their colonies remarkably free of “germs” through the use of antibiotics. Captive colonies of Bull-ants (*Myrmecia* spp.) are maintained for research into the antibiotics they produce from metapleural glands. It requires considerable skill to pin down a bull-ant so that its antibiotic secretions can be milked!

Ants communicate via a wide variety of chemicals, vibration and touch. They lay a trail of complex chemical messages, when foraging, which other ants from the colony can “read” Ant antennae are used to detect the odours and minute traces of chemicals. The odours produced by different colonies of ants, even of the same species, are subtly different. Ants straying into the wrong colony are quickly dispatched.

In the heat of the eastern Sahara the delicate odours produced by ants evaporate, so this system can't be used for communication. Ants have adapted to this situation. *Cataglyphis* ants meander all over the desert while searching for food in the heat of the day, but once they find it they head straight back to the colony. In order to do this they use polarized light to orient themselves as well as using the visual landmarks on the ground.

The type of mandibles a species possesses indicates what sort of lifestyle the species leads. Each species is remarkably different. The most prevalent species of ants are the *Pheidole* group. One species in this group has five horns on its head. Others have plate shaped heads.

All ants are social. They evolved from solitary wasps before the evolution of dinosaurs. There may be up to 100,000 individuals in a colony, all acting as one giant digestive tract. Each individual, except the queen, is dispensable. A feature of ant colonies is that, in many cases, the ants are all sisters. The organization of African Army Ant colonies makes it one of the world's most unrelenting predators.

The lifecycle of ants starts with eggs being laid by the queen. When the larvae hatch they are fed by other ants in the colony. As they eat and grow, they shed their skins four times. They pupate in a silk cocoon. Once a year the colony produces winged females and males (alates). In the case of Harvester Ants (*Aphaenogaster* spp.), females and males all emerge at the same time. They mate in swarms and although many of the females die, some establish new colonies.

Some species of ants make extensive use of silk. Weaver ants (*Oecophylla smaragdina*) build their nests by stitching together leaves. To do this some of the ants in the colony hold the leaves together while other ants pick up

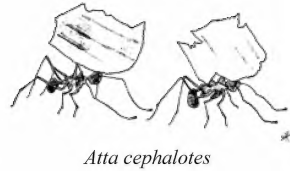


*Oecophylla smaragdina*



larvae and apply the sticky thread the larvae produce to stitch the leaves together. They also include chambers in these nests. Amazingly, all this is done without any apparent supervision.

Leafcutter ants (*Atta cephalotes*) cut vegetation and carry it back to the colony. The pieces are passed on to smaller ant casts in an hierarchical fashion so that the vegetation is cut up into finer and finer pieces by smaller and smaller ants. The vegetation is mulched and used as food to grow a symbiotic fungus species which the ants eat. Dense colonies of the specific fungus is propagated and any unwanted fungi are killed. All ant casts in the colony have different sizes and shapes for specialised functions such as gardeners, mulchers, cutters, soldiers and Queen. The ants use different pathways when they bring food into the colony, so that if they accidentally introduce a pathogen into the colony, the area can be quarantined. Thus only a portion of the colony is affected.



Honey-pot ants (*Camponotus inflatus*) occur in arid Australia. They maintain a store of nectar some four feet (120 cm) underground for when times are harsh. The depository for the nectar is individual ants (repletes) which hang from the roof of a cavern in the nest. The nectar is stored in the abdomens of the ants which can become distended to the size of a grape. Nectar is fed to their sisters by mouth to mouth contact (trophallaxis) when needed.

Butterfly caterpillar and ant associations occur worldwide. Caterpillars can emit a call that attracts the ants. South American Riodinidae butterflies produce calls by moving a small protrusion over ridges on the back of their head. The sounds produced, travel through the plant stems and are picked up by the ants.

Predators of ants have devised ways to circumvent the ants chemical recognition system. Apart from the Small Oak blue butterfly discussed earlier, there are many other ant predators. One example is a jumping spider that mimics the ant recognition chemicals (it smells like an ant). It even looks like a weaver ant. This allows it to get near its prey which it bites injecting a lethal poison. The spider then waits until the ant dies before eating it.

## CREATURE FEATURE

*The following articles feature one of the Swallowtail Butterflies shown on our Poster. The poster can be obtained from BOIC , PO Box 2113, Runcorn, 4113. The cost for members is \$8 plus \$5 postage and handling. Non-members \$12 plus \$5 postage and handling.*





## Chequered Swallowtail (*Papilio demoleus sthenelus*)

One of the more recent additions to my butterfly garden, this is also one of the more active. It always seemed to want to be somewhere else, pausing only momentarily to feed on one of the nectar producing plants that was in flower at the time. I had to find the larval foodplant, so that this butterfly could become more permanent.



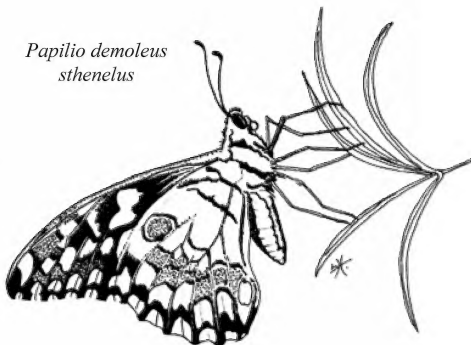
This was not an easy task, nobody seemed to know anything about the foodplant. What does it look like? Where is it growing?

It wasn't until a friend of mine in Brisbane obtained some seeds that any of us saw what the plant looked like. It is a low growing, scrambling plant, which self seeds very readily, so it can form a nice little clump fairly quickly. It has a five pointed compound leaf and hence has gained the common name Emu Foot (*Cullen tenax* formerly *Psoralea tenax*.) I have now had this plant growing in my garden for several years, and every year I have had this butterfly, and its offspring as permanent residents.

The larvae are very variable in colour, changing from black with orange stripes to yellow or green, with lots of almost metallic, orange spots.

The pupa can be either brown or green and hangs upside-down, attached to the underside of a leaf or branch by its tail and a central silken girdle. The pupa actually reminds me of the Dainty Swallowtail (*Papilio anactus*) pupa, that we sometimes find commonly on the citrus trees.

*Papilio demoleus sthenelus*



The adult butterfly is brown-black, with large areas of yellow. The outer edges of the wings have a series of yellow spots and there is one red spot on the base of the hindwings. The underside of the wings are also brown-black, with the yellow areas being more prominent, especially on the hindwing. The hindwing also has a pale orange band running from top to bottom and a series of dull yellow spots edged in blue and black. One orange spot is located on the bottom of the hindwings.

When in flight, they are usually only about a metre above the ground, and as mentioned earlier are very fast. The first impression on seeing them, is of a medium sized, very fast, yellow spotted butterfly.

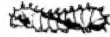
Further information about this butterfly can be had by reading, "*Butterflies of Australia*", by Common and Waterhouse 1981 and "*Butterflies of Australia*" by Michael Braby 2000

**Bob Miller**

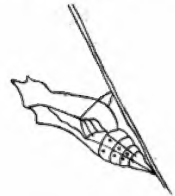


\*\*\*\*\*

Two years ago I planted Emu Foot, in eager anticipation of the arrival of the Chequered Swallowtails on their annual migration. Fast and inquisitive, they arrived during September, searching close to the ground for their host plant. They were unperturbed by my presence and I was able to observe their beauty at close range as they repeatedly returned to deposit their precious cargo of eggs. They were constant visitors over the following weeks. My joy on discovering the numerous tiny, spiked, black caterpillars soon turned to dismay as I realized something was destroying the plant in a big way. The leaves were all glued together, turning yellow and dying. On close inspection I found up to five minute almost colourless caterpillars with black heads, ensconced inside these nest shelters. Not content with just eating the very small amounts they would need to meet their requirements, they totally destroyed it. Before long all that was left were the green stalks. I gathered all the deal leaf material I could and put



it in plastic bags and tied the necks. A smart move, as I discovered later, for out of these emerged literally hundreds of small light brownish coloured moths, about the size and colour of our pesky clothes moths.



Fortunately I had a rather large Emu Foot in a pot in another location that wasn't as badly infested. This supported the

Chequered Swallowtails until it also was eaten out.

Chequered Swallowtail larvae and pupa

A ring around of Club Members revealed that most were contending with the same problem. Fertilizer and repeated watering soon had my original plant recovering, but the lack of vegetative cover left the now large larvae exposed and quite a few disappeared, especially those in their final instar that were of a brilliant orange and black colouration instead of the usual green and orange. Quite a number pupated inside and were released. This was staggered over several months and two have yet to emerge. These moth shelters are still present in small numbers and it's a daily ritual to check and squash the inhabitants inside.

Three distinct batches of swallowtails have gone through, the last having pupated in the last week (mid February). It always amazes me that the butterflies search out and find the host plants we grow, even if we haven't seen the butterfly in our vicinity before.

So, get planting (the seeds germinate in under a week when they are fresh) so you too can enjoy these gorgeous swallowtails for yourselves.

*Lois Hughes*



## PLANT PROFILE

### Emu Foot (*Cullen tenax*) formerly *Psoralea tenax* Fabaceae

**Larval Host for :** Chequered Swallowtail (*Papilio demoleus*) possibly also a host plant for the Common Grass Blue (*Zizina labradus*)

**Height:** 16 cm (6") approx.

**Form:** A perennial ground cover legume with soft divided (digitate – spreading like the fingers of a hand or in this case like the toes on an emu's foot) leaves on a stiff, erect, fine stalk, which softly trails over the ground or tumbles over walls and rocks.

**Flowers:** Numerous, insignificant lilac pea flowers arranged around a stalk. Clusters of black seeds indicate that the seed head is ready for collecting and planting.



**Cultivation:** Seeds readily germinate, sometimes in a week in hot weather and transplant easily. The plants make good growth in summer but slow down considerably in winter. (Mine become very bedraggled as we have frost here.) They prefer a sunny spot, although mine flourish in part shade. Plant seedlings (or seeds) close together to form a dense cover. The tiny leaves disappear quickly when the caterpillars reach their final instar and the dense cover provides more protection from some predators.

**Diseases:** My plants experience mildew of some sort and something else which cause yellow/brown mottling on the leaves and they fall. Both problems are insignificant to the overall vigour of the plant.

**Distribution:** As the butterfly is distributed almost Australia-wide, other members of the Cullen family are listed as host plants in other districts and States of Australia. Butterflies of Australia by Michael Braby has an extensive list and a there is a somewhat shorter one in Common and





Waterhouse. *C. tenax* is listed for some areas of Queensland. Contact the Club for the plant listed in your area if you have no reference books.

I have seed from *C. tenax* available. To obtain seed write to Lois Hughes, West Mt. Cotton Road, Mt. Cotton, Q. 4165 or phone (07) 3206 6229. Please forward a stamped self-addressed envelope. First in first served. **Lois Hughes**

**Plants of *Cullen tenax* are available from Barb's Trees, 15 Jagger St., McDowall 4053 – Ph. 07 3353 8182**

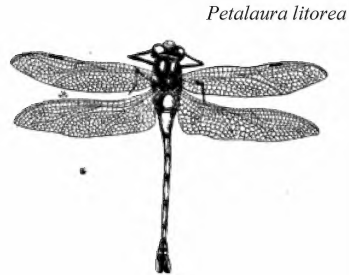
**Toona Rainforest Gardens, Mudgeeraba Q. Ph. 07 5530 5299  
and Barung Landcare Nursery, Maleny**

## CREATURE NOTE

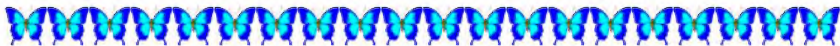
### **Creature Note #25 – First record of the Giant Dragonfly (*Petalaura littoralis*) from the Brisbane Metropolitan area.**

On Saturday the 13<sup>th</sup> January 2001, whilst doing an insect survey at Yugarapul Park Sunnybank, in the Upper Bulimba Creek Catchment, with coordinator Tom Creevy, a specimen of a large brown dragonfly with tail flanges was noted. This clearly fitted the description of *Petalaura litorea* which the writer had seen previously on Stradbroke Island. Dragonfly authorities Ric Natrass from Naturesearch and Deniss Reeves from the

Australian Dragonfly Society were notified and an attempt will be made to secure a specimen for confirmation. The area where it was seen has an extensive peaty Sawsedge (*Gahnia sieberiana* & *G. clarkei*) swamp which is a known habitat requirement for this species whose nymph apparently makes a burrow in the muddy substrate. This species has been recently split from *P. gigantea* whose main distribution is in New South Wales.



Coincidentally, Frank Jordan reports that Kylie Withers, the new local Brisbane City Council Bushcare Officer, on visiting the area a few days later, saw what on her description was most likely a specimen of the same species. We are hopeful that either Ric or Deniss will collect a specimen for confirmation, which hopefully will further highlight the conservation values of this area, which is earmarked for translocation of the *morrisi* subspecies of the Swordgrass Brown butterfly and re-establishment of a threatened species of ground orchid – a project which has government funding and involves members of our own BOIC.



## BUTTERFLY GARDENING

### PART 4 - DRY SCLEROPHYLL GARDENS

The majority of homes in the south-east corner of Queensland would be built on or close to previous dry sclerophyll forest, ie a fire-prone plant community dominated by a canopy of various *Eucalyptus* and *Corymbia* species with a sub-canopy of *Allocasuarina* and *Acacia* species. The ground layer may have been composed of native grasses such as *Themeda* and *Entolasia* with *Lomandra* and *Dianella* species. Some areas may have contained a shrub layer of *Pultenaea*, *Hovea*, *Dodonaea* and *Daviesia* species.

These areas are subject to the mindless 'selective' clearing of developers who clear out all the understorey and leave stark tall 'gum' trees which ultimately become weakened and dangerous. A point to understand here is that most of the butterfly host plants are in the understorey. Tall trees are for the odd mistletoe and perching crows. This is where the butterfly and native plant enthusiast comes to the rescue.

The soil type varies from heavy clay soils to sandy soils with all loam types in between, so select plants which are suited to those soils. Most will grow on clay if the structure of the soil is crumbly (enhanced by mulching) or if the plant beds are built up. Soil pH is usually acid (4.5 to 5.5 is normal for these soils) so the addition of small quantities of lime raises the pH to accommodate a wider range of plants (500g lime per square metre raises the pH by 1 unit).

The nature of the dry sclerophyll forest depends on fire - its intensity and frequency will govern the overall structure and species composition of the forest. Consequently, most plants will regenerate after fire, using a number of mechanisms.

(a) Plants growing from underground rootstocks, tubers, bulbs, ligno-tubers and rhizomes.

These plants regenerate quickly after fire and take on a refreshed look for a time.

They are ideal for butterfly gardens because they are long-lived and generally small or compact. These species include:



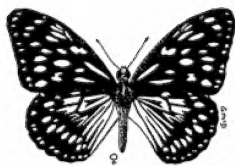
Symmomus Skipper – host  
*Lomandra longifolia*

*Aristolochia* sp. aff. *pubera* - Big Greasy  
*Chrysocephalum apiculatum* (Yellow Buttons) – Painted Lady  
*Cullen tenax* (Emu Foot) – Chequered Swallowtail  
*Cycas* spp. – Onycha Blue  
*Cymbopogon refractus* (Barb Wire Grass) - Ina Grassdart  
*Dianella* spp. (Flax Lily) - Skippers  
*Dioscorea transversa* (Native Yam) – Black and White Flat





*Gahnia* spp. (Sedge) – Swordgrass Brown



Blue Tiger – host *Secamone elliptica*



Zebra Blue – host *Plumbago zeylanica*

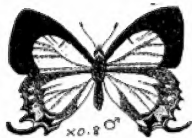
*Glycine* spp. (Glycine vines) – Common Grass Blue  
*Imperata cylindrica* (Blady Grass) – Evening Brown  
*Jacksonia scoparia* (Dogwood) – Cyprotus Blue  
*Lepidosperma* spp. (Sawsedges) – Dirphia Skipper  
*Lepidozamia* spp. – Onycha Blue  
*Lomandra filiformis* (Narrow-leaf Matrush – var. skippers

*Lomandra longifolia* (Long-leaf Matrush) – Symmopus Skipper

*Macrozamia* spp. – Onycha Blue  
*Marsdenia* spp. – Blue Tiger, Common Crow  
*Melastoma affine* (Blue Tongue) – Miskins Jewel  
*Oxalis corniculata* (Yellow Wood Sorrell)-Small Copper  
*Patersonia* spp. – Halyzia Skipper  
*Plumbago zeylanica* (Native Plumbago) – Zebra Blue  
*Pseuderanthemum variable* (Love Flower)-Leafwing, Common Eggfly, Blue Banded Eggfly, Danaid Eggfly  
*Secamone elliptica* – Blue Tiger, Common Crow  
*Smilax australis* (Barb Wire Vine)-Cephenes Blue  
 Miskin's Jewel  
*Themeda triandra* (Kangaroo Grass) - several browns  
*Viola betonicifolia* (Arrowhead Violet)-Aust. Fritillary

(b) Plants regenerating from dormant seed held in woody seed follicles which open after fire and germinate after rain in the ash bed, e.g. *Hakea*, *Banksia*. Very few of this group are butterfly host plants, although their flowers are often rich in nectar. Some such as *Allocasuarina* species are Mistletoe hosts which are hosts to Jezebels and various 'blues'.

(c) Plants regenerating from hard dormant seeds lying in the soil and with seed coats cracked by fire. Most are short lived perennials or annuals, but are very pretty plants, e.g. *Acacias*, *Pultenaeas*, *Hoveas*. They are generally high maintenance plants and are fast-growing. They tend to need regular light pruning to keep them 'tidy' and may require fairly frequent replacing in the garden situation.



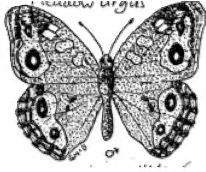
Common Imperial Blue – host *Acacia* spp.

*Acacia* spp. (Wattles)-Tailed Emperor & var. blues  
*Aotus* spp. – Fringed Blue  
*Canavalia* spp. –Dark Cerulean  
*Daviesia* spp. (Pea Bushes) – Fringed Blue  
*Dodonaea triquetra* (Forest Hop Bush)-Fiery Jewel  
*Indigofera* spp. – Grass Jewel, Pea Blue, Common



Grass Blue, Common Grass Yellow  
*Pultenaea* spp. (Pea Bushes)-Fringed Blue,  
 Mathew's Blue

(d) Annuals or short-lived perennials with abundant seed which germinates readily even without fire. May be allowed to seed freely around the garden and hand pull where not required.



Meadow Argus - host *Scaevola*

*Alternanthera denticulata* (Lesser Joyweed)-Common Eggfly  
*Bracteantha bracteata* (Paper Daisy) – Painted Lady  
*Brunoniella australis* (Blue Trumpet)-Blue Argus, C.Eggfly  
*Chrysocephalum apiculatum* (Yellow Buttons) Painted lady  
*Crotalaria* spp. (Rattlepod Peas)-Forget-me-not  
*Portulaca oleracea* (Pigweed)-Meadow Argus, Eggfly  
*Scaevola aemula* (Fan Flower)- Meadow Argus

In conclusion, Dry Sclerophyll plants grow best in an undisturbed area. If you are starting from scratch, plant local Eucalypts and Casuarinas first (about 5 - 10 metres apart) and then in later years a selection of the smaller species mentioned in this article. Try to achieve that natural look! Little fertiliser or water is required with these plants and only light leaf litter is needed as a mulch. Some light pruning of the pea bushes and clumping grasses thickens them up.

If you already have large trees with mown areas between them, gradually allow native grasses and rushes to grow back and selectively remove exotic weeds. Enhance the understorey with additional plantings of shrubs and small Acacias.

(Sketches kindly supplied by Graham)

**Graham McDonald**

## YOU ASKED



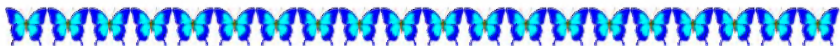
Why is the Swan Plant classed as a weed in Australia while in New Zealand it is sold in nurseries?

**Jo**



The Swan plant is actually two closely related species originally from Africa. They get their name because the seed pods float if they are cut off and placed in a bowl of water. In this situation they have a bit of a resemblance to swans floating on water. These plants have white flowers.

Another closely related plant from America has orange/red flowers and a narrow pod that does not float. In Australia these plants are usually called milkweeds, balloon cotton or silkpods. These names refer to their milky sap, inflated pods or the silky parachutes of their airborne seeds.



These plants have adapted well to Australian conditions where they now are host plants for the Monarch butterfly. The Monarch is not only able to cope with the toxins in these plants but stores them so that any bird which eats them becomes poisoned but not killed. These birds are not likely to eat another one.

These toxins are also effective against mammals as well as birds. Deaths have been recorded for sheep, pigs, rabbits, guinea pigs and possibly horses. However these plants taste terrible and in practice are rarely eaten voluntarily by stock. This accounts for their weed status in Australia but I can't say why they are able to be sold in nurseries in New Zealand. Incidentally, a small but significant number of people are allergic to the milky sap of these plants and these people should exercise care around these plants.

*Frank Jordan*

WE HOPE CLUB MEMBERS DISCOVERED THE WONDERFUL ARTICLE BRODIE MYERS-COOKE PRESENTED IN THE FEBRUARY EDITION OF BETTER HOMES AND GARDENS, IN THE WILDLIFE LIFT-OUT. OUR EFFORTS ON INSISTING ON ACCURACY HAVE BEEN AMPLY REWARDED. WELCOME TO ALL THE NEW MEMBERS WHO HAVE JOINED AS A RESULT. THANKS BRODIE

### WORLD WIDE WEB SITES TO WATCH

A very unconventional place is the Australian Insect Farm – a private property at tiny Garradunga just north of Innisfail on the coastal fringe of Far North Queensland . Visit their web site at <http://www.insectfarm.com.au/>

### LIBRARY BOOKS FOR LOAN

The following books are currently available for loan at meetings:-

*Australia's Butterflies*, by Peter Wilson

*Butterfly Magic*, by Helen Schwencke and Frank Jordan

*Australian Cicadas*, by Max Moulds

*Butterflies of Australia*, by Common and Waterhouse, 1981

*Butterfly Watching*, by Paul Whalley

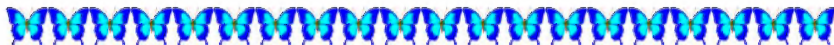
*Flying Colours*, by Mike and Pat Couper

*All Colour Book of Butterflies*, by Robert Goodden

*Lifecycle of the Ulysses Butterfly*, Video, by Janet Richardson

*Lifecycle of the Cairns Birdwing Butterfly*, Video, by Janet Richardson

### BACK ISSUES



## Back Issues of the Club Magazine are available at a cost of \$1 each plus postage (3-6 copies - \$1.50. 1-2 copies \$1.10)

### ADS AND EXCHANGES

Sometimes you may have an oversupply of butterfly larvae and your food supply will not hold out. If this happens, contact Rob MacSloy - 07 3824 4348 - who operates the Register of Host Plants. He can put you in touch with prospective "foster parents". Have YOU advised Rob of the host plants you have available?

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**The poster, Swallowtails of South East Queensland, compiled by the BOIC, can be obtained from BOIC, PO Box 2113, Runcorn, 4113. The cost for members is \$8 plus \$5 postage and handling. Non-members \$12 plus \$5 postage handling.**

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Lois Hughes has quantities of *Cullen tenax* seeds available. Send a stamped addressed envelope to 163 West Mt Cotton Road, Mt. Cotton, Qld 4165

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Felix Jenkins asked that any members who purchased seeds of *Aristolochia tagala* from him and found them not viable would they contact him please. Ph 02 66742023

### BUTTERFLY AND OTHER INVERTEBRATES CLUB PROGRAMME

**March - June, 2001**

**Alexandra Hills Conservation Area walk to be led by Steve Homewood, Bushcare Group Coordinator**

When: Sunday 25<sup>th</sup> March, 2001 starting 10.30am  
Where: Meet at the park in Wimbourne Rd, opposite Chipping Drive, Alexandra Hills (2000 UBD Map 204, reference L-M3)  
What: We will be walking through the Conservation area, looking at butterfly host and other plants in the reserve.  
Bring: Your own lunch to eat in the park after the walk  
RSVP/Contact: Helen 3844 6677, fax 3844 4333, email [hschwenc@dovenetq.net.au](mailto:hschwenc@dovenetq.net.au)

#### Planning and Management Meeting

As well as organising the activities of the Club, we make these meetings informative and enjoyable  
When: Wednesday, 18th April, 2001, 7:30 - 9:30pm  
Where: Daphne Bowden's place  
Contact: Daphne for address and details, 3396 6334, or Helen 3844 6677  
Bring: Yourself and any information, or show & tell items, you want to share

#### Butterfly Workshop

What: A half-day workshop aimed for people starting out with butterfly gardening??  
When: Saturday, 2nd June, 2001, 12:00noon - 5pm (World Environment Day)  
Where: Redlands Indigiscapes Centre, 17 Runnymede Road, Capalaba  
Contact: Daphne - 3306 6334 or Lois - 3206 6229 for further information  
Cost: \$5.00 per person includes afternoon tea. See enclosed flyer.





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*If you plan to attend any of the above events please respond to the person indicated in case, for some unforeseen circumstance, the event has had to be postponed or cancelled.*

#### DISCLAIMER

The Newsletter seeks to be as scientifically accurate as possible but the views, opinions and observations expressed are those of the authors. The Newsletter is merely a platform for people to express their views and are not necessarily those of the BOIC. If inaccuracies have inadvertently occurred and are brought to our attention we will seek to correct them in future editions. The Editor reserves the right to refuse to print any matter which is unsuitable, inappropriate or objectionable and to make nomenclature changes as appropriate.

#### ACKNOWLEDGMENTS

Producing this newsletter is done with to the efforts of:

- Those members who have sent in letters and articles
- Lois Hughes who provides illustrations including the cover
- Daphne Bowden who works on layout, production and distribution
- John Moss for scientific referencing and proof reading
- Helen Schwencke who developed the overall design
- Frank Jordan for inspiration

We would like to thank all these people for their contribution

#### ARE YOU A MEMBER

*Please check your mailing label for the date your membership is due for renewal. If your membership is due, please renew as soon as possible.*

*Membership fees are \$12.00 for Individuals/Schools and \$17.00 for family membership.*

#### **Butterfly and Other Invertebrates Club Inc.**

c/- PO Box 2113

Runcorn Q 4113

**Next Meeting: Sunday, March 25<sup>th</sup> – Alexandra Hills Conservation Area Walk**



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